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AUTHOR Cronbach, Lee J.
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ABSTRACT

This document describes Stanford University's Program for Postdoctoral Training in Educational Research. The Program, which is individualized, operated in 1968-69 to enable established researchers to catch up with new developments and obtain advanced training. Information on the background and Program activities of 4 participants is included. (JS)

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Postdoctoral Research Traineeship Program

Lee J. Cronbach
Director

August 31, 1969

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Stanford University
Stanford, California

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SUMMARY

The Postdoctoral Fellowship Program in Educational Research will enable promising holders of the doctorate to become more competent to conduct research pertinent to education. The program's significance consists in its giving a research worker freedom to undertake any of a variety of activities among the many significant ones available at Stanford, activities that would increase his potential for contributing to education.

Postdoctoral traineeships offer an opportunity for researchers to acquire new skills and concepts necessary for effective research on their current educational interests. Stanford University faculty and facilities are unusually well suited for postdoctoral training. In addition to the School of Education, the Departments of Anthropology, Computer Science, Economics, Political Science, Psychiatry, Psychology, Sociology, Statistics, and others have courses relevant to advanced preparation for educational research. The numerous University research laboratories and centers offer postdoctoral trainees the opportunity for a wide range of research experiences.

Programs are individually structured to meet the trainee's interests and needs, and are expected to consist of an appropriate combination of the following activities: attending classes and seminars; participating in Stanford research projects to the degree that such participation has training value; planning or conducting research in consultation or collaboration with faculty members; and engaging in independent study.

Introduction. Stanford's Program for Postdoctoral Training in Educational Research operated during the year 1968-69 with the objective of enabling established workers to catch up with new developments and to obtain advanced training. Three trainees spent the period from September 1, 1968 to August 31, 1969, on the Stanford campus. A fourth trainee spent the first seven months of his postdoctoral year at Stanford and the last five months of his year at the University of Georgia. Each trainee was assigned an adviser, who helped that trainee to select suitable courses and research activities from the variety of opportunities available on the Stanford Campus. The typical trainee worked in one of the major research laboratories on the campus, and also made contact with additional research groups less close to his field of specialization.

Stanford's faculty and facilities are well suited to postdoctoral training; the following programs, among others, are available: 1) the Center for Research and Development in Teaching; 2) the School Mathematics Study Group; 3) the Stanford International Development Education Center; 4) the Laboratory for Computer-based Instruction. The Departments of Anthropology, Computer Science, Economics, Political Science, Psychiatry, Psychology, Sociology, and Statistics--as well as the School of Education--have strong offerings relevant to advanced preparation for educational research.

Description of the program. Since the program was individualized, no comprehensive description can be given. A statement can be made for each individual trainee as indicated below. Each postdoctoral trainee typically participated in two or three courses or seminars each quarter and spent the remainder of his time in research activities.

Considering the program for each trainee, the following information seems most pertinent:

DR. LEWIS R. AIKEN
Age: 38

Previous training:

B. S. and M. A, in Psychology, Florida State University
Ph.D. in Psychology and Psychometrics, University of North Carolina
Several one-week institutes in statistical analysis, computer programming, and educational research methods

Position prior to postdoctoral appointment:

Professor and Chairman, Department of Psychology, Guilford College, North Carolina

Appointment for 1969-70:

Same as above

Area of interest:

Educational and psychological measurement, and mathematics learning

Publications during 1968-69:

"Nonintellective variables and mathematics achievement." Journal of School Psychology, in press.

"Scoring for partial knowledge on the generalized rearrangement item." Educational and Psychological Measurement, in press.

"Recent research on attitudes concerning science." Science Education, in press.

"Interactions among group regressions: An old method in a new setting." Research and Development Memorandum No. 42, Stanford Center for Research and Development in Teaching, Stanford University, 1968.

Meetings attended during the year in connection with postdoctoral study:

American Educational Research Association
National Council on Measurement in Education

Representative courses audited:

Multivariate Statistical Analysis
Advanced Educational Psychology
Test Theory
Seminar in Individual Differences

DALE L. BOLTON
Age: 41

Previous training:

B. S. in Education (Mathematics and Physics), Oklahoma State University
M.S. in Educational Administration, Oklahoma State University
Ph.D. in Educational Administration, University of Wisconsin
Summer Program in Experimental Design, University of Wisconsin

Position prior to postdoctoral appointment:

Associate Professor of Educational Administration, University of Washington, Seattle, Washington.

Appointment for 1969-70:

Professor of Educational Administration, University of Washington, Seattle, Washington.

Area of interest:

Decision making of administrators, selection and evaluation of teachers, research design

Publications during 1968-69:

"The effects of various information formats on teacher selection decisions", American Educational Research Journal, May, 1969.

"The effect of interviews on teacher selection decisions", Journal of Applied Psychology, in press.

Meetings attended during the year in connection with postdoctoral study:

University Council for Educational Administration regional meeting, University of Washington, Seattle, (made presentation).
AERA Presession on Multivariate Analysis, Santa Monica, California
AERA Annual meeting, Los Angeles, California (presentation)
UCEA meeting on new instructional materials, University of Massachusetts (presentation)
National Conference for Professors of Educational Administration, San Diego, California

Representative courses audited:

Problems of Measurement
Advanced Statistical Analysis
Philosophy of Science
Non-parametric Statistics
Introduction to Stochastic Processes

F. JOE CROSSWHITE
Age: 39

Previous training:

B.S. in Education, University of Missouri
M.Ed. in Secondary School Administration, University of Missouri
Ph.D. in Mathematics Education and Mathematics, Ohio State University

Position prior to postdoctoral appointment:

Associate Professor of Mathematics Education, Ohio State University

Appointment for 1969-70:

Associate Professor of Mathematics Education and Associate Director of the ERIC Information Analysis Center for Science Education

Area of interest:

The teaching and learning of mathematics, teacher education, and research.

Publications during 1968-69:

Continued as a member of the editorial board of The Mathematics Teacher, an official journal of the National Council of Teachers of Mathematics. Edited the monthly department, "Classics in Mathematics."

Joined the editorial board of a newly formed journal, The Journal for Research in Mathematics Education, to be published quarterly by NCTM, beginning in 1969-70.

Collaborated (with James Fey, Teachers College) on the chapter on teaching for the October, 1969 issue of The Review of Educational Research which focuses on mathematics education.

Served as associate editor for the 34th yearbook of NCTM, The Teaching of Secondary School Mathematics, and wrote one chapter, "The implications for Teacher Planning."

Co-authored (with Alan Osborne, Ohio State University) three chapters (Part III, Curriculum and Instruction in the Secondary Schools) of the NCTM yearbook, The History of Mathematics Education in the United States and Canada.

Meetings attended during the year in connection with postdoctoral study:

AERA Annual Meeting in Los Angeles
NCTM Annual Meeting in Minneapolis

Representative courses audited:

Problems in Measurement
Curriculum Evaluation
Advanced Statistical Analysis in Educational Research
Tutorial on Problems in Mathematics Education
Seminar in Mathematics Education
Cultural Transmission
Advanced Educational Psychology
Research Problems in the Sociology of Education

RICHARD C. WALLACE
Age : 38

Previous training:

B. S. in Education andSociology, Gorham State College
Ed.M. in Administration and Supervision, Boston College
Ed.D. in Curriculum and Instruction, Boston College

Position prior to postdoctoral appointment:

Director, Middle School Project, Title III ESEA, Holliston Public Schools, Holliston, Massachusetts

Appointment for 1969-70:

Director of Evaluation, Eastern Regional Institute for Education Syracuse, New York

Area of interest:

Development and evaluation of "process promoting" elementary school curricula

Publications during 1968-69:

"To lead is to inquire," National Elementary Principal, in press.

Meetings attended during the year in connection with postdoctoral study:

AERA convention, Los Angeles
Cubberly Curriculum Conference, Stanford, California
Curriculum Evaluation Conference, University of Illinois

Representative courses audited:

Curriculum Evaluation
Problems of Measurement
Multivariate Statistical Analysis
Seminar in Curriculum
Seminar in Instrumentation

Trainees had an opportunity to participate in a variety of informal seminars and meetings scheduled for the benefit of graduate students in a particular area. These opportunities were particularly strong this year in the fields of Psychological Studies and Mathematical Studies, and of course, in the Center for Research and Development in Teaching.

Evaluation of the Program

(A) Objectives. We have attempted to keep the postdoctoral program highly flexible, and this means that specific objectives have varied with the trainee. There has been some confusion because some announcements from Washington have spoken of this as a Fellowship Award. A number of the individuals receiving awards come here with the idea that they have been given a fellowship to spend their time in activities of their own choice, and sometimes this turns out to be writing a book or otherwise engaging in activities that have little to do with the training responsibility Stanford University agreed to undertake in agreeing to sponsor them . It would be helpful if the staff in Washington would decide whether it is trying to make

training awards or "free time" awards. It is our belief that the field of education has far more desperate need for training opportunities than for free time opportunities. Even in the case of the particular candidate who has an appreciable reputation because of his publications, the year might appropriately have been used to help him identify problems more worthy of his attention than those on which he has been publishing. He was so reluctant to enter into a "training" role, however, that this constructive discussion never took place.

In general, insofar as we can evaluate from our limited knowledge of the total list of trainees and our impressions of those we have dealt with here, the program has not succeeded in attracting the right applications or in selecting the right persons from among the applicants. A rather large number of the successful trainees have been well established individuals who seem unlikely to be moved to a higher level of productivity by the year of training offered, and a good many of them seem to have been committed to the pursuit of a line of research rather than to the sort of openness that would make them trainable. This is not a blanket criticism; there have been a few persons whose careers were clearly moved to a new level of significance as a result of their postdoctoral experience, and I have no doubt that some important contributions were made to younger people whose work subsequent to the traineeship has not yet become visible.

(B) Content. The content of the program is individualized, and is selected from the range of activities normally available to pre-doctoral trainees and to faculty members. This work has provided quite adequate stimulation.

We find it important to correspond with prospective trainees at an early point because with the usual number of faculty leaves of absence and of courses offered only in alternate years, the content of our program is suitable for different kinds of trainees at different points in time.

(C) Staff. The staff was as usual cooperative in giving help and stimulation to trainees. The relationships prove especially fruitful when there has been correspondence during the period when sponsorship is sought that develops mutual respect and awareness of mutual interests. Where sponsorship comes about more casually, the results are often below the optimum.

(D) Trainee selection and project organization. We continue to regard the nationally administered competition as desirable, but we find that we must supplement it with something very nearly like a selection program of our own during the stage where sponsorship is being agreed on. A very large number of persons consider Stanford as a possible site, partly because of the reputation of the school and partly because of the climate. Unfortunately, the literature going to prospective applicants does not now place sufficient stress on the importance of studying the possible institutions and choosing on the basis of the training different schools can offer. The correspondence regarding sponsorship often comes close to the deadline, preventing an adequate exchange of information, and the candidates often seem to regard this as a rather routine matter whereas we regard it as a major commitment on both sides. We have prepared the enclosed statement as an interim method

of helping the trainee to provide us useful information.

So far as program organization is concerned we have little difficulty. The Research Traineeship Program office provides a central clearing house for inquiries regarding sponsorship, for contracts, and the like, even though the sponsor is more likely to be a faculty member whose interests are matched to those of the trainee. It creates a certain confusion to have a listing in the brochure that indicates the Research and Development Center accepts trainees independent of Stanford University. As a matter of fact, it helps us considerably to handle all traineeships from this office, even though the trainee is of course free to work in the Research and Development Center. (Stanford Research Institute is an independent agency and we have no contacts with its trainees.)

The institutional allowance of $1000 has no relation to the cost of operating this training program. We continue to recommend that this be increased substantially if it is the Office policy to operate a training program.

Once again we have had the experience that all trainees coming here were narrowly concerned with educational research, and had only minor interests in making use of resources elsewhere in the University. It is our conviction that the improvement of educational research requires the enlistment of persons with a primary identification with the basic disciplines, and we would welcome trainees who place their major emphasis in advanced training in a discipline, with secondary emphasis on experience in the School of Education. There is obviously something wrong with the program if it is failing to recruit and select young social and behavioral scientists, statisticians, and otherw whose identification with the field of education will always be secondary to their identification with the discipline. It is very difficult, however, to suggest how recruitment could be altered, save for the obvious suggestion that announcements be placed in professional organizations of the major scientific societies as well as in organs going to the educational profession.

Trainee summary

a.	Number of trainees initially accepted in program	4
	Number of trainees enrolled at the beginning of the program	4
	Number of trainees who completed the program	4
b.	Categorization of trainees	
	Number of trainees who principally are elementary of secondary public school teachers	0
	Number of trainees who principally are local public school administrators or supervisors	1
	Number of trainees from colleges or universities, junior colleges, research bureaus, etc.	3

Program director's attendance

a.	What was the number of instructional days for the program?	About 220
b.	What was the percent of days the director was present?	83%

Financial Summary

		Budgeted	Expended	Balance
a.	Trainee support			
	1. Stipends	$69,754	$69,754	-0-
	2. Dependency Allowance	---	---	---
	3. Travel	8,000	7,930	$70.00
b.	Direct Costs			
	1. Personnel	(none)	(none)	(none)
	2. Supplies	(none)	(none)	(none)
	3. Equipment	(none)	(none)	(none)
	4. Travel	(none)	(none)	(none)

5. Other	(none)	(none)	(none)
c. Indirect Costs	$4,000	$4,000	-0-
Total	$81,754	$81,684	$70.00

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STANFORD UNIVERSITY
School of Education

Postdoctoral Research Training Related to Education at Stanford University

As the demand for research-based understanding of educational processes and for evaluative research on operational programs increases, training of research workers beyond the doctoral degree becomes increasingly important. New topics for investigation have emerged during the past dozen years, and improved techniques and concepts are available for the study of long-standing problems. Investigators trained in political science, anthropology, statistics, engineering, and other far-flung fields are accepting the challenge of educational problems and need to supplement their original training. Research workers trained within Education departments find a need for new skills as they begin to explore new areas. Because the investigator already started on his research career comes to advanced training with an active and experienced mind, he can gain greatly from a relatively short period of postdoctoral study. Stanford University has been trying various methods of postdoctoral training for a number of years, and now provides such training as a regular part of its program.

The School of Education has a Research Traineeship Program which, as one function, provides coordination for postdoctoral studies. Postdoctoral work is individualized, and is worked out by the candidate and his adviser. This means that there can be no set or uniform policy. Tentative statements can be made, on the basis of our experience to date, to help the prospective postdoctoral trainee to decide whether he is likely to find what he wants at Stanford and whether his application is likely to be encouraged. The present memorandum is not a formal policy, and we shall be glad to receive proposals

for types of work the memorandum overlooks. In particular, this statement focusses on research training; possibilities for advanced training of practitioners are still too much in flux for any general statement to be made. While this statement applies most specifically to candidates wishing to work with School of Education faculty, most of the information is valid also for those working primarily within a department such as sociology or statistics.

Before discussing trainees, a word may be said about the independent research worker who wishes to spend a sabbatical at Stanford, on his own investigations and writing. We welcome such persons to the extent of offering library privileges, invitations to professional events, etc. Space is much harder to come by; very rarely is space available except where the visitor comes as the guest of the director of a major research program who has space at his disposal. The visitor wishing accommodations should canvass the situation well in advance. If he wishes to join some laboratory he should address his inquiry to the director of that laboratory.

More numerous are the persons who come as research <u>trainees</u>. Stanford will accommodate as many qualified trainees as possible. We regret to discourage any person who wants to work with our faculty, but faculty time, space, and financial resources are scarce, and we have to be selective. (We estimate that the cost of a trainee for whom we make proper provision is equal to at least our normal tuition of $2500 per year; hence Stanford is making a substantial subsidy when any trainee is accepted.)

Stanford has no funds for the personal support of postdoctoral trainees. Most of those who come here are supported on grants from the U. S. Office of Education. Information about application procedures, etc., may be obtained

from Research Training Branch; Bureau of Research; U. S. Office of Education, Washington, D. C. 20202.

We urge persons interested in postdoctoral work at Stanford to correspond with us from the earliest possible date; letters may be addressed to a particular professor but a copy should come to the Director of the Research Traineeship Program (who at this time is L. J. Cronbach). Early correspondence is necessary to determine whether there is an appropriate match of interests and to make sure that the applicant's plans are coordinated with plans for leave of absence, courses to be offered, etc.

The Office of Education requests that a Stanford faculty member "sponsor" any applicant who proposes to work here. While a postdoctoral trainee may do all his work with a single faculty member, most persons wish to interact with a much broader segment of the faculty and we therefore try to bring several faculty members into the decision about sponsorship.

The faculty particularly welcomes applications from the young research worker or scholar who wishes to spend a year as a colleague and coworker with one or more faculty members. This arrangement helps the visitor to develop new skills and interests, and brings us fresh stimulation. Such a visitor will usually take some courses and participate in seminars. A candidate of this kind will have tentatively identified, from his study of the professional literature, the Stanford professors whose research he will find it most profitable to participate in. The Director of the Research Traineeship Program is often able to make additional suggestions regarding relevant work he could undertake here. The candidate should be able to indicate how he expects his stay here to benefit his research efforts after he leaves. We shall want to know what background of training and research

experience the candidate brings to his study, but we prefer the person who recognizes specific needs for further training over the person who is already a "finished" researcher. Preference will be given to those who have completed some amount of research independent of their doctoral dissertations, and who thereby indicate readiness for an advanced experience. There is no formal application procedure; a letter dealing with the matters mentioned in this memorandum is requested.

While we shall consider persons holding Stanford doctorates as trainees, we think that the candidate ordinarily gains more by going to a place where he has not worked before. The Stanford doctorate who seeks to do post-doctoral work here should explain why that generalization does not fit his case.

Insofar as our administrative procedures are concerned, there is no distinction between a candidate coming to work with the Research and Development Center and the candidate applying to the School of Education for sponsorship. The Stanford Research Institute is an independent agency in the community; there are no established procedures for relating SRI trainees to the Stanford faculty.

Some persons propose to spend a year at Stanford in course work. While we are prepared to accommodate some trainees of this type, the need to be selective causes us to ask a number of pointed questions. The candidate should explain why he expects his needs to be better served at Stanford than at other institutions, and how his proposed program will contribute to his subsequent research production. We may wish to examine college transcripts or request GRE scores for persons whose primary emphasis is on course work.

There are five areas in which formal research traineeship programs have been established (see brochure); since these represent concentration of faculty strength, we welcome trainees whose interests fit one of these programs. The door is equally open, however, to the candidate whose primary interest is shared by only one member of the Stanford faculty, in the School of Education or out. Our essential criteria in deciding whether to sponsor a candidate are his promise as a scholar, his need for something Stanford is uniquely able to offer, and the shared interests that make for a mutually satisfying year.

One administrative detail requires mention. Stanford levies a fee of $160 per quarter for a "permit to attend classes". This is ordinarily covered directly by any government grant, and in other cases a request for waiver will be considered but is not automatic.

January 15, 1969